

## Longley Meadows Fish Enhancement Appendix D

### Cumulative Effects Analysis

### Process and Project Area Activities

The following process and assumptions were used by the Longley Meadows ID Team in their analysis of the effects of actions proposed in this document on their resources.

**A. Analysis Area** - In general, the analysis area will be the project area. If the resource being analyzed necessitates extending the analysis area outside the project area for an appropriate analysis then the extent of the analysis area is documented under each resource area.

**B. Effects** - The specific effects of each action alternative on the environment, including the No Action alternative are to be analyzed by each resource area.

***Actions to be analyzed by ALL resources are:***

1. Large wood acquisition include mechanical removal systems (tractor, helicopter) on Jordan Creek Ranch
2. Placement of wood instream include equipment used to install
3. Gravel and boulder placement
4. New channel construction
5. Construction and decommissioning of stockpile sites
6. Construction and decommissioning of temporary access roads
7. Temporary river crossings
8. Construction of dewatering basins and placement of temporary coffer dams
9. Dewatering river segments and fish salvage
10. Cut removal, fill of river segments, and stockpile of overage materials
11. Planting and revegetation
12. Mitigation Measures
13. Area Closure in Project Area Boundary

***Show the cause and effect for Direct, Indirect, and Cumulative effects, defined as follows:***

**Direct Effects:** Explain the direct effects the implementation of the alternatives would have on the environment. These include effects which are caused by the action and occur at the same time and place as the action.

**Indirect Effects:** Describe indirect effects of alternatives on the environment. Indirect effects include those which are caused by the action but are later in time or farther removed in distance what are still reasonable foreseeable.

**Cumulative Effects:** The cumulative effects analysis will include:

Past Actions      +      Present Actions      +      Proposed Actions      +      Reasonably Foreseeable

To understand the contribution of past actions to the cumulative effects of the proposed action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment to the present.

Present actions will incorporate all know activities. Reasonably foreseeable future is approximately 5 years within which we are reasonably certain our proposed actions would occur.

**Note:** should you change any of these parameters, the change is documented in the effects writeup for that resource.

**C. Analyze the effects** in terms of:

1. **Differences from the present condition:** How do each of the alternatives (include all actions under each) change the environment based on what is there now? What are the specific differences between alternatives? What is the direction of the effect (increase or decrease)?
2. **Duration:** How long will the impacts last?
3. **Significance:** Analyze in terms of context and intensity.
  - **Context:** Analyze whether effects are local, regional, national, or affect society as a whole.
  - **Intensity:** Analyze in terms of severity of impacts.

Effects write-ups need to disclose what these actions WILL DO to the environment.

Avoid relative measurements such as "minimal, substantial, etc". Talk about the specific differences between alternatives in units of measure that are relevant, quantifiable, and descriptive. Use the Key Indicators to describe the effects on the key issues.

Use tables graphs, drawings, etc. when appropriate and available.

Use references to relevant scientific studies to back up statements when appropriate and available. In addition, identify where there are information gaps, incomplete or unavailable information.

**IMPORTANT:** Include a section on Forest Plan Compliance in your reports which describes how the project complies with the goals, standards, and guidelines for your resources.

Include your Literature Cited at the end of your report using the 2012 EMC Publishing Arts Style Guide format.

Sign and date your report – can be electronic signature but needs to be done.

**D. Present and Reasonably Foreseeable Future Actions**

The following is a list of present and reasonably foreseeable future activities within the project area, and on immediately adjacent public and private lands. This list will serve as a guide for resource specialists as they define their Analysis areas for their resource and identify the direct, indirect, and cumulative effects of implementing the Longley Meadows Fish Enhancement project alternatives. Reasonably foreseeable future is defined as within the next 5 years for this analysis.

**Present and Reasonably Foreseeable Future Actions in the BTS Project Area**

<b>Project Name</b>	<b>SWS</b>	<b>Year</b>	<b>Activity</b>
<b>Vegetation Management</b>			
Noxious Weed Management Plan	All	Ongoing	Continue prevention and treatment strategies for known noxious weed sites from the 1994 W-W Noxious Weed Management Plan.
W-W Invasive Species Treatment ROD	All	Ongoing	Implement the W-W Invasive Species ROD, which includes an Early Detection Rapid Response (EDRR) strategy for addressing new sites, along with strategies for preventing the spread of and treating known sites.
<b>Vegetation Management Commercial</b>			
BTS Campground Small Sale	Coleman Ridge-GRRiver	2019-2021	This small sale unit is less than 70 acres and is adjacent to the fish log unit, discussed below.
Spring Creek Small Sale	Spring Creek	2019-2021	This small ground based timber sale unit on 70 acres focused on overstory and understory stocking level management, fuel reduction, and reintroduction of fire through prescribed burning.
<b>Fuels Reduction and Prescribed Burning</b>			
Bird Track Springs Precommercial thinning and prescribed burning	Coleman Ridge-GRRiver	Ongoing 2017-2021	Precommercial thinning project by mechanical and hand focused on stocking density management and fuel reduction work which will be followed up by some prescribed underburning.
<b>Special Uses</b>			
OTEC Powerline	Coleman Ridge-GRRiver	Ongoing	Powerline is buried up to where it crosses the river where it comes above ground, crosses the river on the poles and then is buried again.
Outfitter Guide Fly Fishing Permits	Coleman Ridge-GRRiver	Periodic	Permits are periodically issued for guided fly fishing within this segment of the UGR River
La Grande Rifle and Pistol Club	Coleman Ridge-GRRiver	Ongoing, 20 year permit	This includes a 95 acre area that the SUP covers for 5 days per year for an event. Area adjacent to federal lands is a shooting range with structures to support these activities.
<b>Recreation</b>			
Bird Track Springs Interpretive Trail	Coleman Ridge-GRRiver	2021-Ongoing	1.0 mile interpretive hiking trail and small parking area for trail access. To be designed and constructed in 2021.
Bird Track Springs Campground	Coleman Ridge-GRRiver	Ongoing	Developed campground with about 25 camping sites, picnic tables, fire rings, and bathroom.
Dispersed Camping	All	Ongoing	Dispersed camping occurs primarily during hunting season and can occur throughout the project area since there is currently no restriction on cross-country motorized travel.
Firewood Cutting	Coleman Ridge-GRRiver	Ongoing	District-wide personal use firewood – mostly for camp use, firewood program restricts firewood removal within RHCA's.
Snowmobiles Routes	All	Ongoing	No designated snowmobile routes are within the project area.

Project Name	SWS	Year	Activity
OHV Use – Current	Coleman Ridge-GRRiver	Ongoing	No designated OHV trails within the project area. Only highway legal OHV use is permitted on Hwy 244. Cross-country OHV use is permitted but not a regular occurrence.
<b>Roads &amp; Trails</b>			
Travel Management Plan (TMP)	All	2017-2021	To comply with the 2005 Travel Management Rule (TMR) the WWNF began a planning effort to designate roads, trails, and areas for public motor vehicle use in 2007. The 2012 WWNF TMP FEIS displays a range of alternatives meeting the intent of the TMR and the effects of implementing them. Because this planning effort is on-going and expected to occur within the reasonably foreseeable future (next 5 years), the range of alternatives from the TMP FEIS was considered the best representation of a reasonable range of potential effects that could occur upon implementation for use in this analysis. While a specific number of miles of designated routes (roads and trails) will not be known until a decision is made, the analysis from the WWNF TMP FEIS indicates that designated routes could range from a potential high of approximately 6,700 miles (Alternative 4) to a potential low of approximately 2,600 miles (Alternative 6) and x-country motor vehicle use would be managed. Once a final decision is made, the roads, trails, and areas designated for motor vehicle use by the public will be displayed on an MVUM and x-country motor vehicle travel will be regulated. The no action alternative will not be considered in this analysis as it does not meet of the purpose and need for compliance with the TMR.
Danger Tree removal within campground and along Highway 244	Coleman Ridge-GRRiver	On going	Fall and remove Danger Trees as prescribed in: Toupin, R., Filip, G., Erkert, T., & Barger, M. (2008). <i>Field Guide for Danger Tree Identification and Response</i> . Portland, OR: USDA For. Ser. Pac. NW Reg. and USDI Bur. Land Mgt.
Road Maintenance	Coleman Ridge-GRRiver	Ongoing	Yearly maintenance along Highway 244
<b>Range Allotments</b>			
Spring Creek Sheep Allotment	Coleman Ridge-GRRiver	Ongoing	Livestock grazing on the Spring Creek allotment. Authorized grazing sheep 1569 ewe/lamb units of domestic sheep from 6/1-10/25 each year.
Special #2 Allotment	Coleman Ridge-GRRiver	Ongoing	Livestock grazing on the Special #2 Allotment. Authorized grazing of up to 100 head months cattle (cow/calf) from 6/1-10/31 each year. Variable season of use and variable numbers in two pastures.
<b>Water Quality and Fisheries</b>			
Middle Upper Grande Ronde (MUGR) Instream Enhancement	Warm Springs Creek-GRR	2019-2020	Instream enhancement project including work on USFS lands with LWD placement, gravel and boulder placement, instream enhancement work, and riparian planting

Project Name	SWS	Year	Activity
Bird Track Springs Fish Enhancement Project	Coleman Ridge-GRRiver, Jordan Creek	2018-2020	Instream enhancement project including work on USFS and private lands with LWD placement, gravel and boulder placement, instream enhancement work, and riparian planting
<b>Wildlife Enhancement</b>			
Great Gray Owl Platforms	Coleman Ridge-GRRiver	Ongoing	Two great gray owl platforms are located in the old growth stand on the north side of the river.
Aspen Enhancement	Coleman Ridge-GRRiver	Ongoing	An aspen stand on the north side of the GR River has had conifers removed and has been fenced to protect it from ungulate browse.
<b>Mining</b>			
Mining		Ongoing	There are no approved plans of operation. The area is open to mineral entry.
<b>Fisheries Enhancement</b>			
Fish Logs from BTSprings Campground	Coleman Ridge-GRRiver	2018-2021	Removal of approximately 70 trees from 50 acres within the Bird Track Springs Campground area for instream placement in the Upper Grande Ronde River farther upstream from this project. Trees selected will basically be a thinning, cut by hand, and loaded onto trucks from existing roads by a forwarder.
<b>Private Land Activities</b>			
Commercial Harvest	All	2019-2024	None known at this time.
Fuels Reduction	None		
Private structures- Barn Corral Agricultural fields	Coleman Ridge-GRRiver	Ongoing	Various locations throughout the project area.
Grazing	Coleman Ridge-GRRiver	Ongoing	Various locations throughout the project area.
Roads	Coleman Ridge-GRRiver	Ongoing	Various locations throughout the project area.

## Cumulative Effects Determination Tables

### Fisheries

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management  W-W Invasive Species Treatment ROD	Reduction of invasive species competition	Yes	Yes	No	Approved herbicides have been analyzed in WW Invasive Species Treatment ROD. Herbicide buffer widths have been identified and would be followed.
Vegetation Management: BTS Fuel Reduction Proj BTS Campgrnd Project Spring Crk Small Sale		Yes	Yes	No	While located within analysis area (6 <sup>th</sup> field HUC), activities are non-commercial thinning and prescribed burning on relatively flat ground with no activity within RHCA buffers. No negative impacts to streams anticipated; therefore, no measureable cumulate effects.
Special Uses: <ul style="list-style-type: none"> <li>• OTEC Powerline</li> <li>• Fly Fishing O/G Permit</li> <li>• LG Rifle &amp; Pistol Club</li> </ul>		Yes	Yes	No	Powerline is suspended over river, no impacts expected from this powerline or fly fishing along this stretch of river
Recreation – BTS Interpretive Trail		Yes	Yes	No	Trail will be a stable native surface trail that will be removed and relocated as a part of this project. The effects of moving trail are described as a part of the direct and indirect effects for fisheries.
Recreation-Dispersed Camping		Yes	Yes	No	
Recreation-Snowmobile Trails		No	No	No	
Recreation -Firewood Cutting		Yes	Yes	No	Firewood cutting within the project area is very limited due to the limited amount of materials available – this area is fairly picked over due to proximity to La Grande. No cut buffers on perennial fishbearing streams reduce any potential impacts to fisheries.
Recreation – OHV Use	Sediment from OHV use and user built trail construction destroying riparian habitat	Yes	Yes	Yes	Unauthorized user built OHV trails and OHV use is spread across most of the landscape within the Spring Creek area contributing to sediment production and degrading riparian habitat. This, in combination with the impacts from project implementation has a potential to impact fisheries in the short term; however, the long term benefits of the BTS project and implementation of travel management which will restrict motor vehicle use to designated roads, trails and areas will have net beneficial effect to fisheries and critical fish habitat.

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Recreation – BTS Campground		Yes	Yes	No	Campground is separated from the GR River by Highway 244. Recreation activities within the campground have no effect on the project area.
Roads & Trails – Travel Management Plan	Sediment from OHV use and user built trail construction destroying riparian habitat	Yes	Yes	Yes	See OHV use above.
Road Maintenance On Hwy 244		Yes	Yes	No	
Roads – Danger Tree Removal		Yes	Yes	No	
Grazing Allotment – Spring Creek Sheep Allotment Special #2 Allotment		Yes	Yes	No	Sheep herds have a full time shepherd with them at all times ensuring they are kept out of riparian areas. The allotment has well maintained fences and allotment monitoring over the years have shown no measurable impacts.
Fisheries Enhancement – Fish logs from BTS Campground  Bird Track Springs Fish Habitat Enhancement		Yes	Yes	Fish Logs – No BTS Fish Enhancement - Yes	Fish Logs - Ground disturbance will be kept to a minimum for this project due to the limited scope and the methods to be used for tree removal. And no harvest would occur within RHCAs. BTS Fish Enhancement-This project in combination with Longley Meadows will increase the beneficial effects for the riparian and fisheries resources in an area that has historically been of very low quality.
Wildlife Enhancement – GG Owl Platforms Aspen Enhancement		Yes	Yes	No	
Mining		No	No	No	No approved plans of operation
Private Land Activities •Private Structures •Roads •Grazing		Yes	Yes	No	Effects of moving the corral and feedlot out of the riparian area are described as a part of the direct and indirect effects for fisheries.

## Hydrology, Floodplains, and Wetlands

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
<b>Noxious Weed Management:</b> Wallowa-Whitman Invasive Species Treatment Record of Decision	Reduction of invasive species competition	Yes	Yes	No	No impacts to water resources expected since spraying guidelines will be followed.
<b>Vegetation Management:</b> Bird Track Springs precommercial thinning and prescribed burning		No	No	No	
<b>Special Uses:</b> <ul style="list-style-type: none"> <li>• OTEC Powerline</li> <li>• Fly Fishing O/G Permit</li> <li>• LG Rifle &amp; Pistol Club</li> </ul>		Yes	Yes	No	Powerline is suspended over river; no impacts are expected from this powerline. Fly fishing on the GRR would have minimal impacts to water resources through localized bank trampling and associated erosion.
<b>Recreation:</b> Bird Track Springs Interpretive Trail		Yes	Yes	No	Minimal impacts to water resources expected.
<b>Recreation:</b> Dispersed camping		Yes	Yes	No	Minimal impacts to water resources expected.
<b>Recreation:</b> Snowmobile trails		No	No	No	
<b>Recreation:</b> Firewood Cutting		Yes	Yes	No	No impacts to water resources expected.
<b>Recreation: OHV Use</b>		Yes	Yes	No	Unauthorized user-built OHV trails and OHV use is spread across most of the landscape within the Spring Creek area, contributing to sediment production. Water quality could be impacted in the short term, but the long-term benefits of the project and implementation of travel management within the project area would yield a net improvement in sedimentation rates and water quality.
<b>Recreation:</b> Bird Track Springs Campground		Yes	Yes	No	Campground is separated from the GRR by Highway 244. Recreation activities within the campground have no impact on the project area.
<b>Roads &amp; Trails:</b> Travel Management Plan		Yes	Yes	No	See OHV use above.
<b>Road Maintenance on Highway 244</b>		Yes	Yes	No	No impacts to water resources expected.
<b>Roads:</b> Danger Tree		Yes	Yes	No	No impacts to water resources expected.



Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Removal					
Grazing Allotment: Spring Creek Sheep Allotment		No	No	No	
Fisheries Enhancement: Fish logs from Bird Track Springs Campground  Bird Track Springs Fish Habitat Enhancement	Short-term water quality impacts from restoration construction activities possible	Yes	Yes	Bird Track Springs Campground – No  Bird Track Springs – Yes	Some large tree removal is planned within the campground area for another fish enhancement project. Trees would be cut down, loaded with a log forwarder, and hauled off-site. Most of the removal is expected to occur from existing roads and no water resource impacts are anticipated.  The Bird Track Springs project would have similar short-term impacts to those described above for this project. Long-term impacts are expected to be minimal.
Wildlife Enhancement: GG Owl Platforms Aspen Enhancement		No	No	No	
Mining		No	No	No	
Private Land Activities: Private Structures Roads Grazing		Yes	Yes	Structures – No Roads – No Grazing – Yes	Grazing – An existing corral on the private property portion of the active project area would be moved out of the project area, reducing potential livestock impacts on water quality.

## Soils

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management: Wallowa-Whitman Invasive Species Treatment Record of Decision	Reduction of invasive species competition	Yes	Yes	No	No impacts to soil resources expected.
Vegetation Management: BTS Fuel Reduction Project BTS Campground Project Spring Crk Small Sale		No	No	No	
Special Uses: • OTEC Powerline		Yes	Yes	No	Powerline is suspended over the river; no impacts expected

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
<ul style="list-style-type: none"> <li>Fly Fishing O/G Permit</li> <li>LG Rifle &amp; Pistol Club</li> </ul>					from this powerline or fly fishing to soils.
Recreation: Bird Track Springs Interpretive Trail		Yes	Yes	No	This trail would be moved as part of this project; therefore, this would be a direct/indirect effect, not cumulative.
Recreation: Dispersed camping		Yes	Yes	No	No impacts to soil resources expected.
Recreation: Snowmobile trails		No	No	No	
Recreation: Firewood cutting		Yes	Yes	No	No impacts to soil resources expected within the cumulative effects analysis area.
Recreation: OHV use		Yes	Yes	No	Unauthorized user-built OHV trails and OHV use is spread across most of the landscape within the Spring Creek area, contributing to sediment production and soil compaction. Soils could be impacted in the short term, but the long-term benefits of the project and implementation of travel management within the project area would yield a net improvement in soil conditions.
Recreation: Bird Track Springs Campground		Yes	Yes	No	The campground is separated from the GRR by Highway 244. Recreation activities within the campground have no effect on the active project area.
Roads & Trails: Travel Management Plan		Yes	Yes	No	See OHV use above.
Road maintenance on Highway 244		Yes	Yes	No	No impacts to soil resources expected within the cumulative effects analysis area.
Roads: Danger Tree Removal		Yes	Yes	No	No impacts to soil resources expected within the cumulative effects analysis area.
Grazing Allotment: Spring Creek Sheep Allotment Special #2 Allotment		No	No	No	
Fisheries Enhancement: Fish logs from Bird Track Springs Campground	Short-term soils impacts from restoration activities Short-term	Yes	Yes	Bird Track Springs Campground – No	Some large tree removal is planned within the campground area for another fish enhancement project. Trees would be cut down, loaded with

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Bird Track Springs Fish Habitat Enhancement	water quality impacts from restoration construction activities possible			Bird Track Springs – Yes	<p>a log forwarder, and hauled off-site. Most of the removal is expected to occur from existing roads and no additional detrimental soil impacts are anticipated.</p> <p>The Bird Track Springs project would have similar short-term impacts to those described above for this project. Long-term impacts are expected to be minimal. Suggest a single construction season or adequate protection across seasons.</p>
Wildlife Enhancement: GG Owl Platforms Aspen Enhancement		No	No	No	
Mining		No	No	No	
Private Land Activities: • Private Structures • Roads • Grazing		Yes	Yes	<p>Structures – No</p> <p>Roads – No</p> <p>Grazing – Yes</p>	Grazing – An existing corral on the private property portion of the active project area would be moved out of the project area, reducing livestock impacts to the soil.

## PETS – Wildlife

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management W-W Invasive Species Treatment ROD		Yes	Yes	No	
Vegetation Management: BTS Fuel Reduction Proj BTS Campgrnd Project Spring Crk Small Sale		Yes	Yes	Yes	<p>Affected PETS species were analyzed at the subwatershed scale. The Spring Creek Small Sale is occurring in an adjacent subwatershed.</p> <p>Vegetation projects have the potential to reduce habitat for Lewis Woodpecker and Fringed Myotis</p> <p>The Bird Track Springs Fuel Reduction Project will not affect trees of the size necessary for breeding or foraging for Lewis woodpecker of fringed myotis.</p> <p>Longley Meadows will contribute to the cumulative effects of the BTS campground project on Lewis woodpecker and Fringed myotis. These projects could remove roosting and nesting habitat. However, both species require decadent trees and snags for roosting and nesting and no trees over 21 dbh and no snags will be removed under the BTS campground project. Cumulative effects are expected to be minimal.</p>
Special Uses: <ul style="list-style-type: none"> <li>• OTEC Powerline</li> <li>• Fly Fishing O/G Permit</li> <li>• LG Rifle &amp; Pistol Club</li> </ul>		Yes	Yes	No	
Recreation – BTS Interpretive Trail		Yes	Yes	No	
Recreation- Dispersed Camping		Yes	Yes	No	
Recreation- Snowmobile Trails		No	No	No	
Recreation -Firewood Cutting		Yes	Yes	No	
Recreation – OHV Use		Yes	Yes	No	
Recreation – BTS Campground		Yes	Yes	No	
Roads & Trails – Travel Management Plan		Yes	Yes	No	
Road Maintenance On Hwy 244		Yes	Yes	No	
Roads – Danger Tree Removal		Yes	Yes	No	

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Grazing Allotment – Spring Creek Sheep Allotment Special #2 Allotment		Yes	Yes	No	
Fisheries Enhancement – Fish logs from BTS Campground  Bird Track Springs Fish Habitat Enhancement		Yes	Yes	Yes	<p>Longley Meadows would directly remove some large cottonwood trees along the riparian corridor which will contribute to the cumulative effects of the BTS campground fish log project on Lewis' woodpecker and Fringed myotis. The BTS campground fish project could remove roosting and nesting habitat. However, both species require decadent trees and snags for roosting and nesting and no trees over 21 dbh and no snags will be removed under the BTS campground project. Cumulative effects are expected to be minimal.</p> <p>Longley Meadows will preclude spotted frogs from breeding in the area during project activities and will add to the cumulative effects of BTSFHE which will have similar effects.</p> <p>Soil disturbance from the Longley Meadows project would disturb hibernating <i>B. occidentalis</i> and <i>B. suckleyi</i> queens adding another 1.2 mile of disturbance along the Grande Ronde River.</p>
Wildlife Enhancement – GG Owl Platforms Aspen Enhancement		Yes	Yes	No	
Mining		No	No	No	No approved plans of operation
Private Land Activities •Private Structures •Roads •Grazing		Yes	Yes	No	Same as above.

## PETS – Plants

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management W-W Invasive Species Treatment ROD		Yes	Yes	No	
Vegetation Management: BTS Fuel Reduction Proj BTS Campgrnd Project Spring Crk Small Sale		Yes	No		
Special Uses: <ul style="list-style-type: none"> <li>• OTEC Powerline</li> <li>• Fly Fishing O/G Permit</li> <li>• LG Rifle &amp; Pistol Club</li> </ul>		Yes	Yes	No	
Recreation – BTS Interpretive Trail		Yes	Yes	No	
Recreation- Dispersed Camping		Yes	Yes	No	
Recreation- Snowmobile Trails		No	No		
Recreation -Firewood Cutting		Yes	Yes	No	
Recreation – OHV Use		Yes	Yes	No	
Recreation – BTS Campground		Yes	Yes	No	
Roads & Trails – Travel Management Plan		Yes	Yes	No	
Road Maintenance On Hwy 244		Yes	No		
Roads – Danger Tree Removal		Yes	No		
Grazing Allotment – Spring Creek Sheep Allotment Special #2 Allotment		Yes	Yes	No	
Fisheries Enhancement – Fish logs from BTS Campground Bird Track Springs Fish Habitat Enhancement		Yes	No		
Wildlife Enhancement – GG Owl Platforms Aspen Enhancement		Yes	No		
Mining		No	No	No	No approved plans of operation
PVT Land Activities <ul style="list-style-type: none"> <li>•Private Structures</li> <li>•Roads</li> <li>•Grazing</li> </ul>		Yes	Yes	No	

## Transportation Management

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management  W-W Invasive Species Treatment ROD	Reduction of invasive species competition	Yes	Yes	No	
Vegetation Management: BTS Fuel Reduction Proj BTS Campgrnd Project Spring Crk Small Sale		No	No	No	
Special Uses: <ul style="list-style-type: none"> <li>• OTEC Powerline</li> <li>• Fly Fishing O/G Permit</li> <li>• LG Rifle &amp; Pistol Club</li> </ul>		Yes	Yes	No	
Recreation – BTS Interpretive Trail		No	No	No	
Recreation-Dispersed Camping		Yes	Yes	No	
Recreation-Snowmobile Trails		No	No	No	
Recreation -Firewood Cutting		No	No	No	
Recreation – OHV Use		Yes	Yes	No	
Recreation – BTS Campground		No	No	No	
Roads & Trails – Travel Management Plan		Yes	Yes	No	Will not add any roads or motorized trails in this project area; however would provide for additional protection from cross-country motor vehicle use as this area would likely not be designed as an area open to motor vehicle use.
Road Maintenance On Hwy 244	Additional protection and maintenance	Yes	Yes	Yes	Additional protection provided Hwy 244 and additional maintenance provided if log and material source haul impacts highway.
Roads – Danger Tree Removal		Yes	Yes	No	
Grazing Allotment – Spring Creek Sheep Allotment Special #2 Allotment		No	No	No	
Fisheries Enhancement –  Fish logs from BTS Campground  Bird Track Springs Fish Habitat Enhancement		No  Yes	No  Yes	No  Yes	Increased protection provided for Hwy 244 from ice flow impacts and flooding along entire stretch of GRRiver from Bird Track project and the Longley Project combined.

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Wildlife Enhancement – GG Owl Platforms Aspen Enhancement		No	No	No	
Mining		No	No	No	No approved plans of operation
Private Land Activities • Private Structures • Roads • Grazing		Yes	Yes	No	Direct effect would be improved public safety along Grande Ronde River section behind the Rifle Club for river users due to increased height and length of berm behind shooting range.

### Noxious Weeds – Invasive Species

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management  W-W Invasive Species Treatment ROD TriCounty CWMA	Reduction of invasive species establishment and spread.	Yes	Yes	Yes (Beneficial)	Project would increase invasive plant management activities due to anticipated need along with project mitigation and monitoring requirements. Involvement of Tri-County would contribute more resources to manage invasives.
Vegetation Management: Vegetation Management: BTS Fuel Reduction Project BTS Campground Project Spring Crk Small Sale	Potential to increase invasive plant establishment and spread.	Yes	Yes	No	Thinning, which would remove over-story density, and prescribed burning potentially increase invasive plant establishment and spread. The negative effects of vegetation management are offset by the benefits of mitigating the effects of high intensity catastrophic wild fire. (Zouhar, et. al.)
Special Uses: • OTEC Powerline • Fly Fishing O/G Permit • LG Rifle & Pistol Club	Powerline maintenance could require traffic and ground disturbance.	Yes	Yes	No	No impacts expected from this powerline or fly fishing along this stretch of river. Minimal impacts from five day annual special use permit associated with gun club activities.
Recreation – BTS Interpretive Trail	Foot/pet travel and trail maintenance could spread invasive seed and create ground disturbance.	Yes	Yes	No	Trail will be constructed as a part of the BTS project. Foot travel has a low impact. This sort of recreation site would have a higher invasive plant management priority.
Recreation- Dispersed Camping	Vehicle and foot traffic carrying invasive seed.	Yes	Yes	No	Dispersed camping within project area is very limited.



Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Recreation- Snowmobile Trails	People and machines could transport invasive seeds.	No	No	No	Timing of this activity is not conducive to ground disturbance or plant seed dispersal.
Recreation -Firewood Cutting	People and machines could transport invasive seeds	Yes	Yes	No	Firewood cutting within the project area is restricted because it is within the riparian area.
Recreation – OHV Use	Introduction of invasive seeds, ground disturbance from OHV use, and user built trail construction	Yes	Yes	No	Unauthorized user built OHV trails and OHV use is spread across most of the landscape within the Spring Creek area contributing ground disturbance and invasive seed transportation. This, in combination with the impacts from project implementation has a potential to impact invasives in the short term; however, the long term benefits of the Longley project and implementation of travel management which would restrict motor vehicle use to designated roads, trails and areas would have a minor net beneficial effect to invasive plant management related to the project area.
Recreation – BTS Campground	Introduction of invasive plant seed by vehicles, pets, and people.	Yes	Yes	No	This activity has a minimal effect. Camping areas will not sustain disturbed ground.
Roads & Trails – Travel Management Plan	Introduction of invasive plant seeds by OHVs	Yes	Yes	No	See OHV use above.
Road Maintenance On Hwy 244	Invasive plant management activities contributed by ODOT. Introduction of invasive seeds from fill materials and maintenance equipment.	Yes	Yes	Yes	ODOT herbicide application along Hwy right-of-way adds to invasive plant management within project area. Equipment activities and material brought in could transport invasive seed to project area.
Roads – Danger Tree Removal	Foot travel introducing invasive seeds.	Yes	Yes	No	Saw falling trees is a low impact activity.
Grazing Allotment – Spring Creek Sheep Allotment Special #2 Allotment	Sheep transporting invasive seeds into project area. Sheep eating invasive plants.	Yes	Yes	Yes	Sheep potentially carry invasive plant material from adjacent rangeland into disturbed ground within the project area. This effect is offset by the benefits of sheep eating invasive plants in the

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
					project area.
Fisheries Enhancement – Fish logs from BTS Campground Bird Track Springs Fish Habitat Enhancement	Ground disturbance	Yes	Yes	Yes	BTS project activities have created large areas of ground disturbance, increasing potential for invasives establishment.
Wildlife Enhancement – GG Owl Platforms Aspen Enhancement	Foot travel. Increasing upper story cover and native plant density.	Yes	Yes	No	Low impact activity from foot travel. Aspen enhancement would increase competition with invasive plants.
Mining	Ground disturbance and machinery/ foot traffic.	No	No	No	No approved plans of operation
Private Land Activities •Private Structures •Roads •Grazing	Ground disturbance and machinery/ foot traffic.	Yes	Yes	Yes	Cattle grazing, vehicle and machinery traffic, hay farming, all have potential to increase potential for invasive plant introduction and spread.

## Recreation

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management W-W Invasive Species Treatment ROD		Yes	Yes	No	
Vegetation Management: BTS Fuel Reduction Proj BTS Campgrnd Project Spring Crk Small Sale	Smoke impacts to campground and recreationists	Yes	No	Yes	If project activities and prescribed burning are going on at the same time could create smoke impacts in addition to noise and dust created during project implementation.
Special Uses: • OTEC Powerline • Fly Fishing O/G Permit • LG Rifle & Pistol Club		Yes	Yes	No	
Recreation – BTS Interpretive Trail		Yes	Yes	No	
Recreation- Dispersed Camping		Yes	Yes	No	
Recreation- Snowmobile Trails		No	No		
Recreation -Firewood Cutting		Yes	Yes	No	
Recreation – OHV Use		Yes	Yes	No	

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Recreation – BTS Campground		Yes	Yes	No	
Roads & Trails – Travel Management Plan		Yes	Yes	No	
Road Maintenance On Hwy 244	Slow traffic and noise impacts to local campground	Yes	Yes	Yes	Road maintenance activities occurring concurrent with project activities would require traffic control needs and could produce short term impacts to those recreating within the area or attempting to pass through.
Roads – Danger Tree Removal		Yes	Yes	No	
Grazing Allotment – Spring Creek Sheep Allotment Special #2 Allotment		Yes	Yes	No	
Fisheries Enhancement – Fish logs from BTS Campground  Bird Track Springs Fish Habitat Enhancement	Impacts to campground users – machinery noise and dust	Yes	Yes	Yes	Removing logs from the campground for a another fish enhancement project in Sheep Creek could negatively impact campers within the project area if completed at the same time Bird Track activities are going on.
Wildlife Enhancement – GG Owl Platforms Aspen Enhancement		Yes	Yes	No	
Mining		No	No	No	No approved plans of operation
Private Land Activities •Private Structures •Roads •Grazing		Yes	Yes	No	

## Scenery/Visuals

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management  W-W Invasive Species Treatment ROD	Reduction of invasive species competition	Yes	Yes	No	
Vegetation Management: BTS Fuel Reduction Proj BTS Campgrnd Project Spring Crk Small Sale		Yes	Yes	Yes	Machinery, smoke, and dust will cumulatively effect work being done as part of fish habitat project.

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Special Uses: <ul style="list-style-type: none"> <li>• OTEC Powerline</li> <li>• Fly Fishing O/G Permit</li> <li>• LG Rifle &amp; Pistol Club</li> </ul>		Yes	Yes	No	
Recreation – BTS Interpretive Trail		Yes	Yes	No	
Recreation- Dispersed Camping		Yes	Yes	No	
Recreation- Snowmobile Trails		No	No		
Recreation -Firewood Cutting		Yes	Yes	No	
Recreation – OHV Use		Yes	Yes	No	
Recreation – BTS Campground		Yes	Yes	No	
Roads & Trails – Travel Management Plan		Yes	Yes	No	
Road Maintenance On Hwy 244		Yes	Yes	Yes	Machinery and road building materials will cumulatively affect scenery from 244 viewshed.
Roads – Danger Tree Removal		Yes	Yes	No	
Grazing Allotment – Spring Creek Sheep Allotment Special #2 Allotment		Yes	Yes	No	
Fisheries Enhancement – Fish logs from BTS Campground  Bird Track Springs Fish Habitat Enhancement		Yes	Yes	Yes	Temp road construction, smoke, and machinery will have a cumulative effect.
Wildlife Enhancement – GG Owl Platforms Aspen Enhancement		Yes	Yes	No	
Mining		No	No	No	No approved plans of operation
Private Land Activities <ul style="list-style-type: none"> <li>•Private Structures</li> <li>•Roads</li> <li>•Grazing</li> </ul>		Yes	Yes	No	

## Heritage Resources

Project	Potential Effects	Overlap APE in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management  W-W Invasive Species Treatment ROD	Reduction of invasive species competition	Yes	Yes	No	No ground disturbance with these treatments
Vegetation Management: BTS Fuel Reduction Proj BTS Campgrnd Project Spring Crk Small Sale		Yes	No	No	Outside of APE and not near any known Mt. Emily RR grade segments.
Special Uses: <ul style="list-style-type: none"> <li>• OTEC Powerline</li> <li>• Fly Fishing O/G Permit</li> <li>• LG Rifle &amp; Pistol Club</li> </ul>		Yes	Yes	No	No ground disturbance.
Recreation – BTS Interpretive Trail		Yes	No	No	Existing trail and new trail not within APE.
Recreation-Dispersed Camping		Yes	Yes	No	No ground disturbance.
Recreation-Snowmobile Trails		No	No		
Recreation -Firewood Cutting		Yes	Yes	No	No firewood cutting permitted within River riparian habitat conservation area.
Recreation – OHV Use		Yes	Yes	No	Most OHV use not occurring on FS lands within the APE, some does occur on Private land. Limited amount no measurable effect.
Recreation – BTS Campground		Yes	No	No	
Roads & Trails – Travel Management Plan		Yes	Yes	No	
Road Maintenance On Hwy 244		Yes	Yes	No	No new ground disturbance. Only previously disturbed road location and adjacent ROW.
Roads – Danger Tree Removal		Yes	Yes	No	
Grazing Allotment – Spring Creek Sheep Allotment		Yes	No		Outside of APE.
Fisheries Enhancement – Fish logs from BTS Campground  Bird Track Springs Fish Habitat Enhancement		Yes	No	No	All project activities avoid any known cultural/heritage resources and have project design criteria to avoid/protect any cultural resources found during project implementation.
Wildlife Enhancement – GG Owl Platforms Aspen Enhancement		Yes	No		Outside of APE.
Mining		No	No		No approved plans of operation
Private Land		Yes	Yes	No	

Project	Potential Effects	Overlap APE in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Activities •Private Structures •Roads •Grazing					

### Adjacent State and Private Lands/Infrastructure

Project	Potential Effects	Overlap APE in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management W-W Invasive Species Treatment ROD	Reduction of invasive species competition	Yes	Yes	No	
Vegetation Management: BTS Fuel Reduction Proj BTS Campgrnd Project Spring Crk Small Sale		Yes	No	No	Floodplain areas not entered under FPlan RHCA no activity buffers.
Special Uses: • OTEC Powerline • Fly Fishing O/G Permit • LG Rifle & Pistol Club		Yes	Yes	No	There will be direct effects on the Rifle and Pistol Club; however, the Longley project in combination with the Rifle and Pistol Club activities would not create a cumulative effect on adjacent lands and structures.
Recreation – BTS Interpretive Trail		Yes	Yes	No	
Recreation- Dispersed Camping		Yes	Yes	No	
Recreation- Snowmobile Trails		No	No	No	
Recreation -Firewood Cutting		No	No	No	Firewood cutting not permitted in floodplains
Recreation – OHV Use		Yes	Yes	No	
Recreation – BTS Campground		Yes	Yes	No	
Roads & Trails – Travel Management Plan		Yes	Yes	No	
Road Maintenance On Hwy 244	Improved protection during ice/flood events	Yes	Yes	Yes	Project design for the Longley and BTS Fish Habitat Enhancement projects in combination with scheduled regular maintenance has the potential to increase protection of Hwy 244 during flood and ice events.
Roads – Danger Tree Removal		Yes	Yes	No	
Grazing Allotment – Spring Creek Sheep Allotment		No	No	No	

Project	Potential Effects	Overlap APE in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Fisheries Enhancement – Fish logs from BTS Campground Bird Track Springs Fish Habitat Enhancement	Potential for more logs downstream	Yes	Yes	Yes (BTS Fish Habitat Enhancement Project only)	Instream enhancement work on both of these projects would increase large wood in the system; however, strategic wood structure design would minimize the downstream transport of materials (likely still less than historic levels of wood transport through the system).
Wildlife Enhancement – GG Owl Platforms Aspen Enhancement		No	No	No	
Mining		No	No	No	
Private Land Activities <ul style="list-style-type: none"> <li>•Private Structures</li> <li>•Roads</li> <li>•Grazing</li> </ul>		No	No	No	